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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,798	08/22/2003	Takashi Kawaguchi	116914	8136
25944	7590	12/14/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			SHOSHO, CALLIE E	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/645,798

Applicant(s)

KAWAGUCHI, TAKASHI

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/26/06 has been entered.

2. All outstanding rejections are overcome by applicant's amendment filed 9/26/06.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (U.S. 6,247,808) in view of either Freeman et al. (U.S. 6,781,912) or Arita et al. (U.S. 6,695,443) and Ohta et al. (U.S. 5,954,866).

Ma et al. disclose color ink set comprising (i) black ink comprising water, solvent, black pigment, dispersant, acrylic polymer, and pH adjusting agent, i.e. organic amine, and (ii) colored ink comprising water, solvent, coloring pigment, dispersant, acrylic polymer, and pH adjusting agent, i.e. organic acid. It is disclosed that the black ink possesses pH of about 8 while the colored ink includes magenta ink possessing pH of about 3 and yellow ink comprising pH of 2.5-4. There is further disclosed ink cartridge containing the ink set (col.1, lines 13-15, col.4, lines 20-35 and 40-57, col.5, lines 10-21, col.6, lines 1-8 and 25-28, col.7, lines 36-40, col.8, lines 21-23, 39-44, and 48, col.9, lines 41-col.10, line 15, col.11, lines 9-11, and col.12, lines 11-34). It is noted that the disclosure that the pH of the black ink is "about" 8 clearly encompasses presently claimed pH in claim 2 of 8.7.

The difference between Ma et al. and the present claimed invention is the requirement in the present claims of black ink comprising resin particles having carboxyl groups.

It is noted that Ma et al. disclose that other acrylic polymers are added to the inks to improve various properties of the ink (col.11, lines 9-11), however, there is no explicit disclosure that the acrylic polymer has carboxyl group as presently claimed.

Freeman et al., which is drawn to ink jet ink, disclose the use of acrylic polymer particles comprising 1-10% (meth)acrylic acid (col.4, lines 1-39 and 66-67) as a binder in order to

improve the resistance of the ink to dry smear and wet rub and to improve highlighter resistance of the ink (col.1, lines 49-57).

Alternatively, Arita et al., which is drawn to ink jet ink set, disclose the use of acrylic resin particles in order to promote fixation of the colorant to the substrate, improve frictional resistance of print outs, and inhibit penetration of colorant into substrate (col.14, lines 31-38 and 59-65 and col.15, lines 1-10). The acrylic resin particles are known under the tradename Microgel E-1002 or SAE 1014 which are well known, as disclosed by Ohta et al. (col.12, lines 30-32 and 61-63), to be obtained from acrylic acid.

In light of the motivation for using resin particles having carboxyl groups disclosed by Freeman et al. or Arita et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such resin particles having carboxyl groups as the acrylic polymer in the black ink of Ma et al. in order to produce ink with improved resistance to dry smear and wet rub and improved highlighter resistance, or alternatively, to produce ink with good fixation of colorant to substrate that possesses good frictional resistance, and thereby arrive at the claimed invention.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. in view of either Freeman et al. or Arita et al. and Ohta et al. as applied to claims 1-3 and 5-9 above, and further in view of Carlson et al. (U.S. 6,136,890).

The difference between Ma et al. in view of either Freeman et al. or Arita et al. and Ohta et al. and the present claimed invention is the requirement in the claims of specific resin.

Carlson et al., which is drawn to ink jet inks, disclose the use of polyurethane comprising carboxyl groups in order to minimize aggregation and flocculation of pigment (col.2, lines 34-39, col.6, lines 9-42, and col.7, lines 25-37).

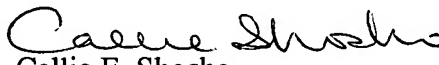
In light of the motivation for using polyurethane comprising carboxyl groups disclosed by Carlson et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such polyurethane in the ink jet ink of Ma et al. in order to prevent aggregation and flocculation of the pigment, and thereby arrive at the claimed invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
12/10/06